Edited book

The Blended Teaching and Learning

Methods & Practices

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PREFACE

Teaching and learning have been revolutionized in the twenty-first century as a response to shifting work patterns and cultural trends, and students now anticipate technology-based and flexible learning as alternatives. Thus, we sought to explore the methods and practices of the contemporary world based on blended teaching and learning through this book. These days, learning occurs in a variety of physical locations, such as educational or coaching institutions, workplaces, and homes, in addition to both open and closed virtual platforms. Blended learning is part of that learning location in higher education, not only for on-campus programs but also for programs created for learners learning at a remote and for professional learning and practice groups.

Teaching professionals presently confront the issue of educating students and training employees while incorporating information and communication technology (ICT) into their instruction for relatively broad and diverse populations. However, it appears that the library and information science (LIS) literature has a propensity to concentrate only on face-to-face or virtual learning approaches, which is a missed possibility. In order to maximize the benefits of each method while minimizing the drawbacks, this book provides a comprehensive blended learning method that combines the best elements of both conventional and modern learning and teaching methods.

Blended teaching and learning are currently consistently placed as key developing trends in higher education and are therefore of specific diplomatic significance for the long run for academic institutions, their learners, and educators, in addition to the expanding society of professional learning and teaching. In this book all the authors shared their experience, findings and thoughts to explore the blended teaching model. The problems with teaching and learning in on-campus and online environments are then discussed, accompanied by a look at how blended teaching and learning offer a method for creating groups of learning and practice, especially for professional learning. This book also embraces important topics such as methods and practices in teaching, including virtual connectivity techniques and learning processes, social media applications, m-learning, and concepts of teaching and learning. It also includes scheduling and developing blended learning initiatives, utilizing personal and collective learning exercises, operating as an e-tutor, establishing virtual groups of involvement and practice, and handling blended learning projects. Most of the research on professional learning and groups has only recently begun to recognize features of blended teaching and learning practices as crucial in the respective area, so this book is attempting to cover those voids.

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CHAPTER 5

Learning by Doing! Application of Experiential Learning Theory in Teaching Otolaryngology Surgical Skills to Residents

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INTRODUCTION

Experiential learning in surgery is defined as learning by doing, in which the student actor is grounded to the reality, where a real-life situation acts as a stage for learning. Experiential learning is a powerful method of learning. "Weltanschauung" is German word that means our way of seeing, or rather our stained perspective of the world through the lens of experience. Hutton, (1989) states that "experiential learning is learning that is rooted in our doing and our experience". Unlike children, adult learners actively construct their own conclusions based their own interpretation of their experience. We see through the looking glass of our experience and our conclusions derived from our experience. For example, a child who has seen his father smoke, would probably never consider smoking a bad habit, his perception being clouded by his father, whom he sees as a perfect, audacious role-model. It is Learner-centric method of learning, in which the teacher's role is that of a mere facilitator, whose main work is pique the natural curiosity and concerns of the learner. He is a mere cog in the greater wheel of education.

His or her focus is nurturing an environment of continuous learning, asking the right questions, facilitating the process of learning, and learning process is at the pace of the learner.

We observe are 3 types of Experiential learning, as we proceed to introspect the Experiential theory of learning stated by Evans (1992).

Retrospective learning

Retrospective learning where past experiences, shape the future actions of a student surgeon. I remember that my loose, skin suture led to Cerebrospinal fluid (brain fluid) leak in the ward, while doing my Neurosurgical rotations. A minor mistake as a surgical trainee haunts me even today. It is acrid reminder that sutures must be of appropriate tension, too tight and they cut through the skin and too loose and the wound dehisces, opens when the patient coughs or strains. How do you teach a trainee to titrate tension in suturing? Experience.

Concurrent learning

These are the experiences we accumulate on day-today practice of surgery. These are immediate lessons we learn daily. For example, a few days back I was treating a hanging

patient, who had fully recovered but was persistently complaining of neck pain, on closer examination of her X-ray plates we found that she had cryptic, fracture of the Hyoid bone. The words of my guru and a great teacher Prof. T. Ramanathan, came to my mind "We must always give heed to patient complaints, no matter how trivial, no matter how frivolous'.

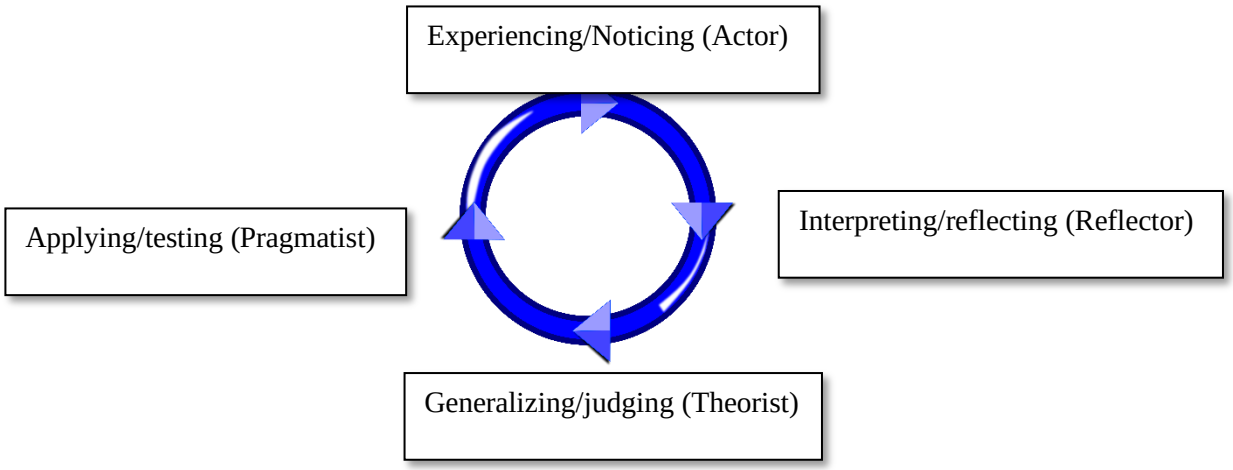
Prospective learning

These are projection of abstract ideas and concepts which we learn in real-life surgical situations and scenarios. A 3-year residency in E.N.T surgery cannot prepare a doctor for all the novel and out of the ordinary disease and their unique presentations. A surgeon must accumulate ideas and concepts during their training which they must extrapolate in their own clinical practice. For instance, I had learnt that Tetanus one of the rare causes of trismus, inability to open mouth. So, when a patient consulted me for difficulty opening his mouth and along with painful muscle spasms and rigidity, I immediately asked any history of injury and history of taking Tetanus vaccine which was negative, leading me to conclude that the patient did not have a throat problem at all. It was Tetanus!

Assessment experiential learning

Regular, paper examination is increasingly frowned upon by educationists, who favor more stress-free evaluation. The following are the tools in a surgical teacher's armamentarium to assess the lessons learnt from experiences. An essay or report of the activity submitted soon as the activity is over, daily learning surgical journal or surgical logbook reflecting the day-today learnings by the student, peer assessment by the senior residents or self-assessment essays and reports as stated by Beard & Wilson (2006).

Fig.1 Kolb's Experiential learning model (Picture by author)



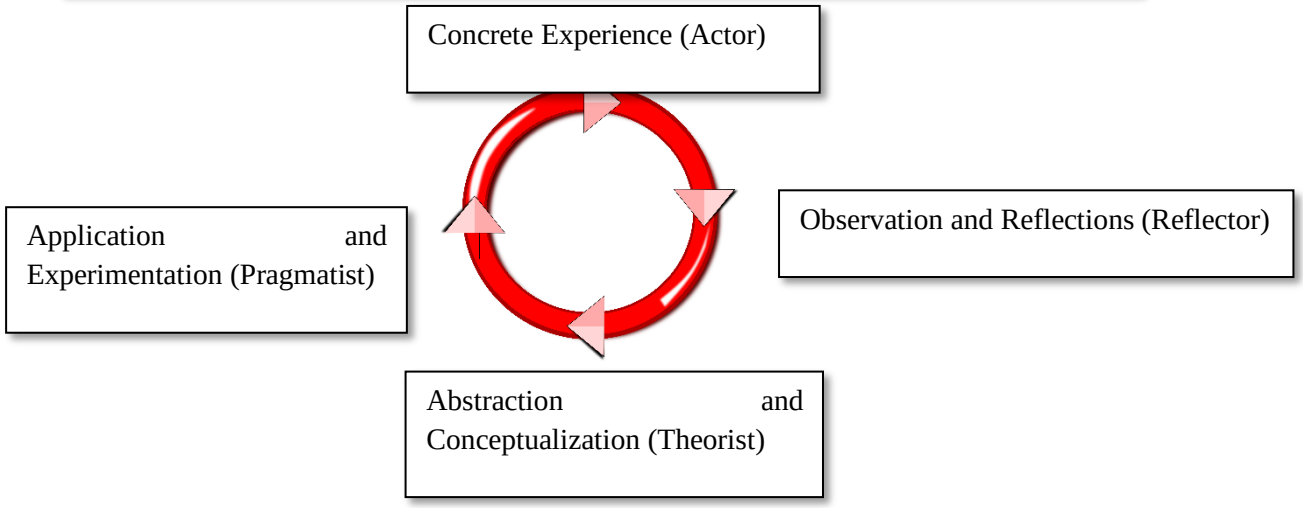
Kolb's Experiential learning model – David A. Kolb (1984)

Kolb (1984) described an Experiential learning model based on work by earlier educationist like Lewin, Dewey, and Piaget. The Kolb's cycle of learning begins with an experience or observation, leading to reflection or interpretation in one's mind, followed by generalization,

followed by testing or application of the concept experienced. Kolb's model has 2 ranges namely, 1. The Perceiving continuum (how an individual perceives new experiences and the Processing continuum (how an individual internalizes these experiences). Honey and Mumford's learning expand upon the Kolb's model, they introduce the concept of individual, preferential learning style on the personal experiences. Stage 1 is the activist or actor, Stage 2 is the reviewer or reflector, Stage 3 is theorist, concluding from the experiences and final stage of that of a Pragmatist, who plans further actions fruit of the lessons learnt as observed by Moon (2004).

Kolb Learning Style Inventory (KLSI) is a tool to understand the preferred learning styles of individuals in the Kolb Experiential Learning Theory paradigm, Tha & Khin (2015). This tool is periodically being revised by David A. Kolb himself. Kolb Learning Style questionnaire, is based on the KLSI, helps people realize their experiential learning style, like VARK learning style (visual, auditory, reading/writing, and kinesthetic) This questionnaire help realize that the experiential learners are Activists, Reflectors, Theorists, and Pragmatists.

Fig.2 Kolb Learning Style Inventory (KLSI) for Kolb's Experiential learning cycle (Picture by author)



Research with KLSI toolkit has found 4 type of learning style namely: 1. Diverging, 2. Assimilating, 3. Converging, and 4. Accommodating Kolb & Kolb (2005). For example, persons with Converging learning styles usually choose to become Engineers and Medicine, while those with Accommodating styles become Nurses and Teachers.

Table1. Four types of learning style based on Kolb's model of Experiential learning, elucidated from research on KLSI toolkit -Kolb (1999)

Learning style			
Diverging	**Assimilating**	**Converging**	**Accommodating**
Concrete Experience (Actor)	Abstraction and Conceptualization (Theorist)	Abstraction and Conceptualization (Theorist)	Concrete Experience (Actor)
Observation and Reflections (Reflector)	Observation and Reflections (Reflector)	Application and Experimentation (Pragmatist)	Application and Experimentation (Pragmatist)

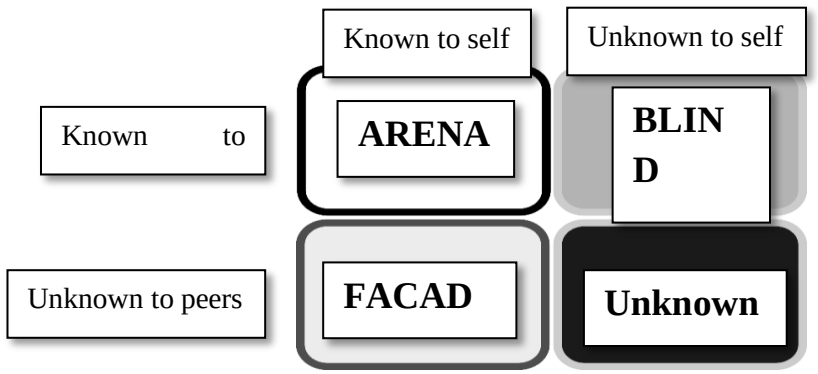
Emotional aspects of learning and modelling process of Experiential learning by the Johari Window

Learning by experience, arouses several emotions and fears in trainees, the fear of failing, of embarrassment or being ridiculed by peers or seniors, and so on. To better understand such emotional response and to understand the process of imbibing new skills, educational theorists use a model is called Johari Window of Joseph Luft (1961).

Johari Window is amalgamation of names 'Joe' (Joseph Luft) and 'Harry' (Harry Ingram)

two psychology professional who created this window into steps of learning as observed by Raveendran & Gopakumar (2007). This window is based on premise that everyone has their own pace of acquiring skills and their build own inner reflection of their skill sets. We have

Fig.3 Understanding the process of Experiential learning by the Johari Window (Picture by author)



blind spots, areas where we lag our peers, and we are ignorant about our deficiency

Johari Window consists of 4 panes which represents four aspects of our process of Experiential learning. The top left panel is the completely open window, containing things

which are known to self and to peers, like performance of common surgical procedure example taking a throat swab. This is common knowledge. Left lower panel contains skills that are known to self but unknown to others or peers. These are skills which the trainee has acquired in advance, but his peers are behind him. Right top pane models our blind spots, which are things unknown to self and but known peers. here the peers have acquired skills in advance and the person is lagging and does not know he is falling behind, hence the individual blind spot. Finally, right lower panel is the dark zone, these are skills which have fallen under the radar of both teachers and students. These are surgical skills that neither the person nor the peers have acquired.

Critiques of Experimental learning

Miettinen (2000) observed that the Kolb's model fails to consider the interpersonal relationships and influences that shape the course of our actions and inactions.

Pavlica and Thorpe's (1997) narrate that the Kolb's model is disjoint from the rich social, historical, and cultural aspects of self, thinking and action. Holman et al (1997) argues that social interaction was ignored in the model and that it was a vital factor in individual growth. Holman et al (1997) argue that learning rarely follows such a structured pattern. Eraut (2000) states that clean and tidy images of learning are deceptive.

Conclusion

Experiential learning nurtures the intellect and instill feelings of empathy for our patients', improves the diagnostic and surgical skills of the trainee. Experience is the keystone of all learning and the driving stimulus in the student's curiosity and quest for skill and knowledge. Teaching in surgical residency must be holistic process incorporating all the novel and helpful aspects of modern educational theories. The aim of teaching and learning methodology is achievement of highest levels in Blooms taxonomy of learning namely applying powers of synthesis for creation of new knowledge in the surgical specialty, for instance, by authoring research papers, posters, or thesis.

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